

Amendments to the Specification:

Please replace the title as follows:

~~HOLOGRAPHIC RECORDING METHOD AND HOLOGRAPHIC RECORDING DEVICE~~

HOLOGRAPHIC RECORDING METHOD AND HOLOGRAPHIC RECORDING

APPARATUS

Please replace the paragraph beginning on page 3, line 6, with the following rewritten paragraph:

With the method of dividing the contrast of intensity modulation, which is one of the methods of creating a gray-scale mentioned above, the spatial light modulator, or the means for intensity modulation, is limited to devices of polarization control type (such as a liquid crystal display). Spatial light modulators of direct reflection type like a DMD (Digital Micromirror Device; Tread Mark) cannot be used.

Please replace the paragraph beginning on page 4, line 22, with the following rewritten paragraph:

In Summary, the above-described objectives are achieved by the following embodiments ~~aspects~~ of the present invention.

Please replace the paragraph beginning on page 11, line 9, with the following rewritten paragraph:

The object optical system 18 is composed of: a beam expander 18A for expanding the p-polarized light transmitted through the first polarizing beam splitter 14 in beam diameter; a

second polarizing beam splitter 18B which is configured to transmit the p-polarized light expanded in beam diameter by this beam expander 18A and reflect s-polarized light; a quarter-wave plate 18C which lies in an optical path of the object beam transmitted through the second polarizing beam splitter 18B and performs $\pi/4$ modulation on the phase of the object beam; a DMD (~~Digital Micromirror~~) 18D, or a reflection type spatial light modulator, for performing spatial light modulation on the object beam transmitted through this quarter-wave plate 18C by reflecting the incident object beam in a direction for irradiating the holographic recording medium 16 with via the quarter-wave plate 18C and the second polarizing beam splitter 18B (exposure direction) or reflecting it away in another direction (non-exposure direction) with respect to each pixel of the data page; and a Fourier lens 18E which is configured to perform a Fourier transform on the object beam that is reflected from this DMD 18D, transmitted through the quarter-wave plate 18C in the direction opposite from the foregoing, and reflected from the second polarizing beam splitter 18B, and focuses it to near the holographic recording medium 16.

Please replace the paragraph beginning on page 15, line 20, line 3, with the following rewritten paragraph:

It should be appreciated that in the foregoing first embodiment, a single data page is recorded in two exposure times of irradiation since the data page, or data image, is rendered in three tones, or ON pixels, gray pixels, and OFF pixels. If the reproduction data page has an SNRSMR margin, a greater number of tones may be used. More specifically, it is possible to render in $N + 1$ tones, where the single exposure time t_1 is given by dividing the exposure time t_0 by an integer N of not less than 2.

Please replace the paragraph beginning on page 17, line 19, with the following rewritten paragraph:

Corresponding to the areas α to δ having such respective light intensities, this second embodiment uniformizes the distribution of exposure intensities on the holographic recording medium 16, for example, by setting the number of times of reflection in the exposure direction of the exposure time t_1 of the DMD 18D to a small number (one) in area α , and increasing it like two, three, and four in areas β , γ , and δ in succession.

Please replace the paragraph beginning on page 19, line 6, with the following rewritten paragraph:

The present invention provides a holographic recording apparatus ~~medium~~ which can divide an exposure time by using a reflection type spatial light modulator, and control the number of times of exposure of incident object beam pixel by pixel in accordance with the data page to be recorded, thereby achieving multilevel gradation exposure.